UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105

Memorandum

DATE: October 13, 1995

TO: Alisa Wong, Cynthia Sans

FROM: John Hillenbrand

SUBJECT: **Review of Owyhee Maintenance Roads Shop Building Investigation Workplan**

In general the workplan appears to cover all the tasks needed for investigation of the site.

The analytical tests appear appropriate except for the number of metals samples. Because the groundwater is so shallow, the definition of the groundwater plume may be obtained by using the backhoe to dig more pits. This would be less expensive. A few QA/QC samples could then be obtained by drilling or direct push technology.

The following points are the changes I recommend:

1. The two wells that are contaminated are currently unusable for a source of domestic supply or for monitoring (because of long screens). They are presently a conduit for spreading contamination to lower parts of the aquifer or to other deeper aquifers. I recommend that these wells be properly abandoned and sealed to prevent the spread of contamination. If the two wells that are contaminated cannot be abandoned and sealed then they should be pumped from near the water table at low volume, thereby limiting spread of contamination horizontally towards the third well and vertically to a lower zone.

2. Discontinue use of well #3 to prevent the spread of contaminants to the clean well. If not possible, then decrease extraction rate as much as possible and pump from the shallowest well that is contaminated and abandon the others. Treatment/discharge of effluent may be a problem.

3. Match chemistry of groundwater contaminant with a source area. Sample all petroleum hydrocarbon materials in tanks and pipes including residues. These will be standards by which groundwater samples will be matched. Original chromatographs of these should be submitted. Soils beneath tanks and pipes should be sampled in the same manner.

4. Two to three backhoes should be operating continuously while the mobile lab is present. All samples should be obtained from pits except for three wells (used to determine gradient) to the placed according to pit results.

5. Soil samples for metals analysis should be held until the results from the sump and the yard are obtained. The six month holding time for most metals will accommodate this strategy. If metals are shown to not be a problem then the samples can be discarded.

6. Soils logging outlined in section 3.7 should also include odors detected, observations of staining, photographs and any other observations that will give a complete picture of the spread of contamination.

7. Page A10, Table 1
   - The geotechnical tests for Atterberg limits are not needed for this investigation.
   - The trenches mentioned in these six location classifications should be visually logged by a geologist and samples gathered that will represent the major lithologies in the trench. Up to three samples.
   - No well should be over 20-25 feet deep in this investigation, therefore location type #1 should not state that samples should be taken at "20 foot intervals below 15 foot depth.

8. Some of the geophysical logging methods proposed in section 3.9 are not effective in cased wells. Also since any additional well(s) will not be deeper then 25 feet, no geophysics will be required. The wells should continuously logged by hollow stem auger.

9. The need for metals analysis (section 3.1) on a quarterly basis will be determined after the first sample round.

10. All samples taken below pipes should be taken six inches below the bottom of trench backfill. The top of the concrete slab is an arbitrary reference point that is not appropriate.